1530, 2077, 2099, 2095, 2184, 2114, 2196, 1831, 1531, 1533, 171, 2074, 2174, 1835, 1839

KAISER ALUMINUM & CHEMICAL CORPORATION

MATERIAL SAFETY DATA SHEET

300 LAKESIDE DRIVE, OAKLAND, CALIFORNIA 94643

DMS 1680

Company/Plant	Issue Date	Identification Number
Kaiser Aluminum & Chemical Corporation 300 Lakeside Drive Oakland, California 94643	June 1, 1985	
Trade Name (Common Name or Synonym) Aluminum Alloys	**Emergency Phone Number** 415-271-5391	
Chemical Name Aluminum (does not include lithium and nickel alloys)	**Formula** Al	**DOT Identification Number** NA

I. INGREDIENTS

Material or Component

BASE METAL	CAS NUMBER	% COMPOSITION BY WEIGHT	1984-85 ACGIH TLV (mg/m^3) *	OSHA 1910.1000 TWA (mg/m^3)**
Aluminum	7429-90-5	80.0-99.7	10.0, as metal dust and oxide 5.0, as welding fume	Not established " "

ALLOYING ELEMENT	CAS NUMBER	MAXIMUM % COMPOSITION BY WEIGHT 1.0-10.0	1.0-20.0	1984-85 ACGIH TLV (mg/m^3)*	OSHA 1910.1000 TWA (mg/m^3) **
Cobalt, Co	7440-48-4	W, P		0.1	0.1
Copper, Cu	7440-50-8	W	P	0.2, as fume	0.1, as fume
Iron, Fe	1309-37-1	W, P		5.0, as fume	10.0, as fume
Magnesium, Mg	1309-48-4	W	P	10.0, as fume	15.0, as fume
Manganese, Mn	7439-96-5	W		1.0, as fume	5.0 Ceiling
Silicon, Si	7440-21-3		W, P	10.0, as total dust 5.0, as respirable dust	Not established " "
Tin, Sn	7440-31-5	P		2.0, as oxide and metal	2.0, as inorganic compounds
Zinc, Zn	1314-13-2	W, P		5.0, as fume	5.0, as fume

Key:
W = Wrought aluminum (fabricated products)
P = Prime and ingot hardener aluminum
*TLV = Threshold-Limit-Value
**TWA = Time-Weighted-Average

Note: Kaiser Aluminum alloys may be composed of all combinations of the alloys shown here. In addition, the welding of aluminum alloys may produce the gases listed in Section VII, #7.

II. PHYSICAL DATA

Material is (At Normal Conditions):	Appearance and Odor		
☐ Liquid ☒ Solid ☐ Gas ☐ Other	Metallic appearance; no odor		
Acidity/Alkalinity pH = NA	Melting Point 440-1215 °F Boiling Point NA °F	Specific Gravity (H_2O = 1) 2.5 - 2.9 Solubility in water (% by weight) nil	**Vapor Pressure (mm Hg at 20°C)** NA

III. PERSONAL PROTECTIVE EQUIPMENT

Appropriate personal protective equipment is required when melting, casting, machining, forging, or otherwise processing. The nature of the processing activity will determine what form of equipment is necessary, i.e., glasses, respirator, protective clothing, and ear protection.

IV. EMERGENCY MEDICAL PROCEDURES

For skin contact, remove particles by thoroughly washing with soap and water.

For eye contact, flush with water for at least 15 minutes. Get medical attention if irritation persists.

NA = Not Applicable

V. HEALTH/SAFETY INFORMATION

Health

Inhalation: Not likely unless material machined, welded or remelted. Short term overexposure to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of throat and nose.

Ingestion: Not likely.

Skin: Not likely.

Eyes: May irritate eyes when welding or plasma cutting.

Treshold Limit Value: See Ingredients Section.

Fire and Explosion

Flash Point	Auto Ignition Temperature	Flammable Limits in Air	Extinguishing Media
NA °F	NA °F	Lower NA % Upper %	Dry powder or sand.

Unusual Fire and Explosion Hazards: Damp aluminum dust may spontaneously heat with liberation of hydrogen to form explosive air mixtures. SEE ADDITIONAL INFORMATION.

Extinguishing Media Not to be Used: Do not use water or halogen on dust fires.

Reactivity

Stability: ☒ Stable ☐ Unstable

Incompatibility (Materials to Avoid): Anhydrous bromine.

Conditions to Avoid: See Fire and Explosion Section. SEE ADDITIONAL INFORMATION.

Hazardous Decomposition Products: See Fire and Explosion Section. SEE ADDITIONAL INFORMATION.

VI. ENVIRONMENTAL

Spill or leak procedures

NA

Waste Disposal Methods*

Used or unused product should be tested to determine hazard status and disposal requirements under federal, state, or local laws and regulations.

*Disposer must comply with Federal, State and Local disposal or discharge laws.

VII. ADDITIONAL INFORMATION

1. Halogen acids and sodium hydroxide in contact with aluminum may generate explosive mixtures of hydrogen.
2. Finely divided aluminum will form explosive mixtures in air. It will also form explosive mixtures in air in the presence of bromates, iodates, or ammonium nitrate.
3. When remelting aluminum scrap, entrapped moisture or the presence of strong oxidizers such as ammonium nitrate could cause an explosion. This applies to the collection of moisture in sow cavities as well. Moisture must be driven off prior to remelting.
4. Do not touch cast aluminum metal or heated aluminum product without knowing metal temperature. Aluminum experiences no color change during heating. If metal is hot and touched, burns can result.
5. Aluminum powder must be packaged and shipped as a Flammable Solid, UN1396.
6. Hard alloy ingots in the 2000 and 7000 series must be stress-relieved to prevent explosion when sawed.
7. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infra-red radiation and ultra-violet radiation.